



Displacement Requirements

Bio-LNG in the Maritime Sector

Introduction

This PDF provides insight into how displacement requirements in the maritime sector work – and how certified Bio-LNG (liquefied biogas) can be used as an effective, verifiable and scalable solution to meet FuelEU Maritime requirements.

The maritime sector faces gradual requirements to reduce greenhouse gas intensity and improve carbon indices. Fossil fuels must therefore be supplemented or replaced with renewable alternatives such as biogas.

As a producer and supplier of certified biogas, we help you document CO₂ reductions, ensure full traceability and optimise your compliance costs – while strengthening your green profile.



How the system works

FuelEU Maritime

- EU regulation under Fit-for-55 that limits ships' annual greenhouse gas intensity.
- The requirements increase progressively from 2% in 2025 to 80% in 2050, making low-emission fuels necessary.
- The regulation covers all onboard energy consumption, and compliance is measured using actual operational data.

Why displacement requirements are relevant for you

The new displacement and reduction requirements in FuelEU Maritime make climate performance a direct operational and cost factor for all larger vessels. The requirements tighten year by year, meaning that ships running on conventional fuels will increasingly struggle to comply without reducing speed, adjusting routes, or investing in significant technical upgrades.

For you as a shipping company or operator, the displacement requirements are particularly relevant because:

- **Compliance now has a clear price**
FuelEU Maritime introduces substantial penalties, and poor CI ratings can result in mandatory action plans, reduced operational flexibility, and lower charter attractiveness.
- **The rules apply broadly**
Ships over 5,000 GT operating on EU routes are covered by FuelEU, while all larger ships calling at EU ports are subject to the 50% rule.
- **Documentable GHG reductions are essential**
Displacement using certified sustainable fuels is one of the few ways reductions can be recorded, verified, and approved.
- **Displacement provides strategic flexibility**
FuelEU pooling in particular allows optimisation across the fleet – for example by allocating green fuels to the most exposed routes and vessel types.

In short:

Displacement requirements are not merely regulatory obligations – they are a key factor in avoiding significant penalties, maintaining unrestricted operation, and preserving competitiveness in a market where green performance is becoming increasingly important.

How it works in practice

1. FuelEU Maritime – Well-to-wake intensity

FuelEU calculates each year a vessel's average greenhouse gas intensity based on:

- Energy consumption (MJ)
- Lifecycle emissions (gCO₂eq)

Result: gCO₂eq/MJ

This intensity is compared with annual reduction requirements, and non-compliance triggers penalties of EUR 2,400 per ton CO₂eq (2025–2029). The annual report is submitted to the flag state and verified by a third party.

2. Reporting and strategies

- FuelEU: Annual reporting, third-party verification, and direct financial penalties for non-compliance.

Shipowners typically optimise through FuelEU pooling, where the fleet's average performance is calculated so Bio-LNG can be prioritised for vessels with high EU exposure. For CII, optimisation often focuses on speed and routing, where Bio-LNG enables higher speeds without losing rating performance.

Allocation and flexibility

Intensity-based system – no quotas

FuelEU Maritime is an intensity-based system. This means all ships are assessed under the same principles regardless of size or type, and no special rules exist for specific vessel categories. The emphasis is on actual performance, creating strong incentives to choose technologies and fuels with the greatest impact.

With pooling, shipowners can balance fleet-wide performance. This allows Bio-LNG to be strategically deployed on ships with high EU exposure—such as ferries—while routes counted only at 50% (e.g., international routes) can be operated on fossil LNG.

Price and market

Bio-LNG typically trades with a premium of 150–250 DKK/GJ, but this additional cost is offset by significant value creation across several regulatory and commercial areas.

Primarily, Bio-LNG reduces the risk of FuelEU penalties, which can reach up to EUR 2,400 per ton CO₂eq – corresponding to EUR 0.5–2 million annually for a larger vessel. At the same time, it improves CII ratings and helps avoid D/E classifications that could lead to speed restrictions and lower charter value – many shipping companies already require at least a C rating. Bio-LNG also reduces the need for EU ETS allowances by up to 85%, directly lowering operating costs. The fuel strengthens a shipping company's ESG profile and opens access to green shipping corridors and improved financing conditions.

The 2025 market is characterised by limited global supply, high demand, and a price premium driven by FuelEU Maritime, CII requirements, and ETS costs. Demand for biogas Guarantees of Origin (GOs) already exceeds supply in Europe, highlighting the tight market and the strategic value of early access to sustainable molecules such as Bio-LNG.

New regulations and developments

The coming years will bring significantly stricter requirements for vessel environmental performance. Under FuelEU Maritime, reduction requirements increase progressively from 2% in 2025 to 80% in 2050. Already after 2035, LNG-powered vessels will typically depend on Bio-LNG to remain compliant. In parallel, IMO is working on a global GHG strategy targeting 40% intensity reduction by 2030 and 70–100% by 2050, along with a new global well-to-wake fuel standard expected in 2027.

The CII regime is also tightening, with 2% annual escalation, expansion to additional vessel types from 2026, and discussions of stronger sanctions for D/E ratings. On the fuel side, RED III requires at least 70–80% GHG savings, and certification is mandatory for the fuel to qualify under FuelEU.

In short: Displacement requirements are evolving rapidly and becoming more extensive. With certified Bio-LNG you can:

- Document reductions for both FuelEU Maritime and IMO CII
- Avoid significant penalties
- Reduce EU ETS costs
- Increase fleet strategy flexibility
- Strengthen ESG profile and market access



Want us to help you move forward?

Would you like to know more about how Bio-LNG and biogas certificates can help you comply with both FuelEU and IMO requirements?

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